



Precision Converting Services

METAL FOIL & CONDUCTIVE COATING ABLATION

Precision Converting Services offers accurate laser ablation services, ideal for the removal of conductive and metalized layers from flexible substrates. Because of its single step, non-contact process, conductive inks and metal foils are removed without causing damage to the carrier substrate. And unlike chemical etching, fiber laser ablation uses a dry processing method controlled by completely digital technology. As a result, masks and hazardous byproducts are eliminated.

Precision Converting Services is able to create flexible circuits with tighter tolerances than traditional ablation methods due to the superior vision registration capabilities of our patented LaserSharp® digital converting systems. This advanced technology allows the **Precision Converting Services** team to produce accurate, high performance components with tolerances down to $\pm.002''$ ($\pm 50 \mu\text{m}$), depending on material and design. Laser ablation can be completed on either side of roll and sheet fed materials, and is suitable for stacked, layered, and laminated structures.

Applications for metal foil and conductive coating ablation include:

- **Conductive circuit creation**
- **RFID antennas**
- **Flexible circuits**
- **EMI shielding**
- **Flexible heating elements**
- **Conductive touch screen components**

Advantages:

- Dry, non-contact processing method that eliminates the need for masks and harsh chemicals
- Achieve tolerances down to $\pm.002''$ ($\pm 50 \mu\text{m}$)
- No pattern or geometry limitations
- Rapid turnaround due to digital technology
- Ability to combine ablation with other laser processes for a complete manufacturing solution
- Design revisions are as simple and fast, ideal for prototyping
- Roll fed capabilities up to 300 FPM
- Maximum sheet fed material size of 20" x 20" (500 mm x 500 mm)



Suitable materials for laser ablation:

- Substrates:
 - PET
 - Polyimide
 - Polycarbonate
 - Polypropylene
 - Paper
- Metalized layers:
 - Ag
 - Al
 - Au
 - Cu
 - Ni
 - Pd
 - Pt
 - Ti
 - IZO
 - ITO

Process area:

- Sheet fed material:
 - 6" x 6" (150 mm x 150 mm)
 - Ability to tile for up to 20" x 20" (500 mm x 500 mm)
- Roll fed material:
 - Cross web: 12"
 - Down web: unlimited length

Complete Solutions

In addition to laser ablation, **Precision Converting Services** also offers multiple laser capabilities for electronic applications, including laser cutting, kiss-cutting, via hole drilling, and perforating. These additional processes can be performed in conjunction with laser ablation to efficiently complete the converting cycle, resulting in a rapid turnaround of finished components.

High Quality Processing

Our LaserSharp® ablation systems utilize steered beam laser technology and advanced vision systems to ensure patterns are accurately matched to other features, all while continuously moving through the processing area. Our patented process controller constantly monitors and adjusts laser power in response to web speeds, ensuring consistent results. In turn, metalized materials and conductive coatings are precisely removed without damaging the carrier substrate or creating a negative environmental impact.

The Digital Advantage

Laser digital converting offers many advantages not available with conventional methods. The path of the laser beam maintains extremely tight tolerances and is not pattern or geometry limited. Additionally, because laser processing uses digital files, modifications can be made instantaneously, reducing downtime. Laser ablation, using our digital technology, is also the most efficient method for developing prototypes and shortening a product's time to market as a result of fast and easy changeover from development stage to full-scale production.

